

# About this manual

LINDY CPU Switch - Installation and Use

Second Edition (May 1998)

LINDY CPU 2 Switch – Part No. 32 252

LINDY CPU 4 Switch – Part No. 32 253

LINDY CPU 4 OSD Switch – Part No. 32 259

LINDY CPU 8 OSD Switch – Part No. 32 257

LINDY CPU 16 OSD Switch – Part No. 32 258

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## Safety information

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- For use in dry, oil free indoor environments only.
- Warning - live parts contained within power adapter.
- No user serviceable parts within power adapter - do not dismantle.
- Plug the power adapter into a socket outlet close to the LINDY CPU Switch.
- Do not use power adapter if power adapter case becomes damaged, cracked or broken or if you suspect that it is not operating properly.

## Warranty

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LINDY Electronics Ltd warrants that this product shall be free from defects in workmanship and materials for a period of one year from the date of original purchase. If the product should fail to operate correctly in normal use during the warranty period, LINDY will replace or repair it free of charge. No liability can be accepted for damage due to misuse or circumstances outside LINDY's control. Also LINDY will not be responsible for any loss, damage or injury arising directly or indirectly from the use of this product. LINDY's total liability under the terms of this warranty shall in all circumstances be limited to the replacement value of this product.

If any difficulty is experienced in the installation or use of this product that you are unable to resolve, please contact your supplier.

# Radio Frequency Energy

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Shielded cables must be used with this equipment to maintain compliance with radio frequency energy emission regulations and ensure a suitably high level of immunity to electromagnetic disturbances.

## **European EMC directive 89/336/EEC**

This equipment has been tested and found to comply with the limits for a class B computing device in accordance with the specifications in the European standard EN55022. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions may cause harmful interference to radio or television reception. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to correct the interference with one or more of the following measures: (a) Reorient or relocate the receiving antenna. (b) Increase the separation between the equipment and the receiver. (c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected. (d) Consult the supplier or an experienced radio / TV technician for help.

## **FCC Compliance Statement (United States)**

This equipment generates, uses and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in Subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area may cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

## **Canadian Department of Communications RFI statement**

This equipment does not exceed the class A limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le règlement sur le brouillage radioélectriques publié par le ministère des Communications du Canada.

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# 1. Introduction

Thank you for purchasing the LINDY CPU Switch. Your LINDY CPU Switch is a high performance keyboard, monitor and mouse sharing device which supports a wide range of PC hardware and software platforms.

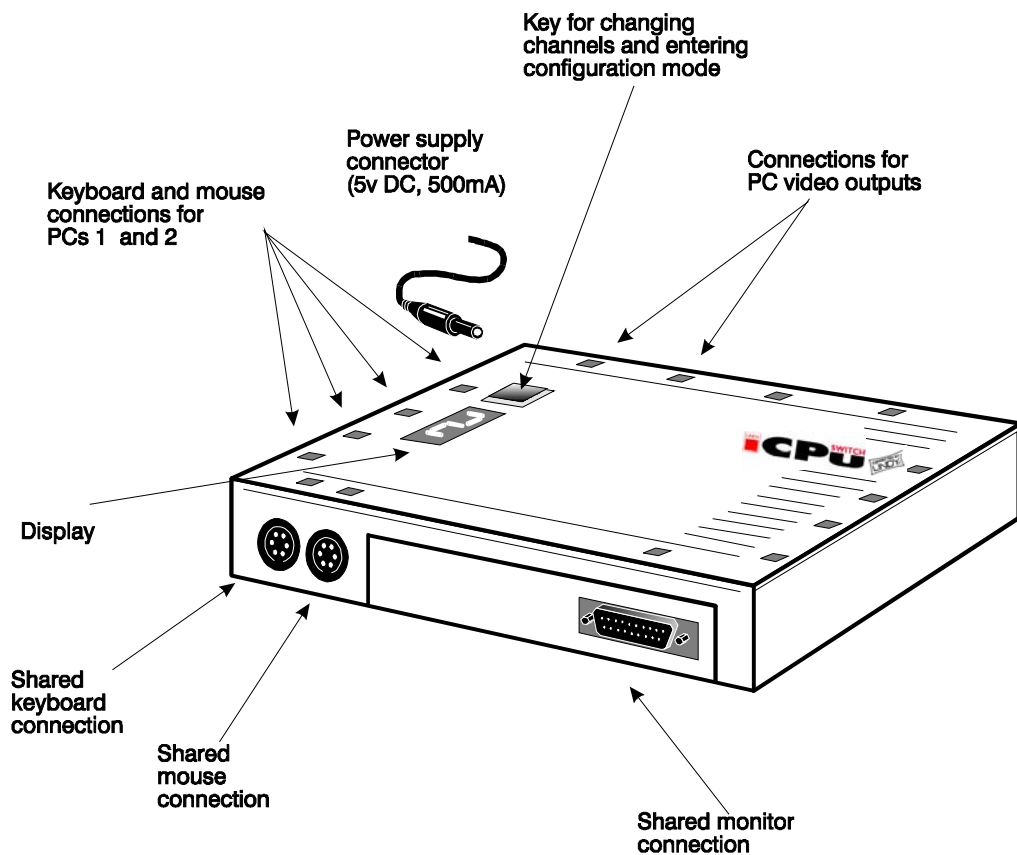
## 1.1 Key Features

Key Features of LINDY CPU Switch	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
Control multiple PCs from a single keyboard, monitor and mouse.	Yes	Yes	Yes	Yes	Yes
Control multiple PCs from a local and remote keyboard, monitor and mouse.	No	No	Yes	Yes	Yes
On-screen menu allows computers to be selected by name.	No	No	Yes	Yes	Yes
SmartBoot feature automatically boots all machines during power up.	Yes	Yes	Yes	Yes	Yes
Duplicate control ports allow local and remote keyboard / monitor / mouse access.	No	No	Yes	Yes	Yes
Mixed AT/PS2 keyboards and PS2/RS232 mice supported as standard.	Yes	Yes	Yes	Yes	Yes
Can be cascaded to provide a video switching network.	Yes	Yes	Yes	Yes	Yes
OVQ circuit ensures Optimum Video Quality even over extended distances.	Yes	Yes	Yes	Yes	Yes
Password security prevents unauthorised use.	Yes	Yes	Yes	Yes	Yes
Remote control module for convenient operation.	No	Yes	Yes	Yes	No
Channel switching by on-screen display	No	No	Yes	Yes	Yes
Channel switching by front panel key, keyboard hotkey, or button mouse.	Yes	Yes	Yes	Yes	Yes
Automatically restores keyboard and mouse states when channel changed.	Yes	Yes	Yes	Yes	Yes
Can be controlled remotely via an RS232 serial port.	No	Yes	Yes	Yes	Yes
Supports high bandwidth monitors at resolutions up to 1600 x 1200.	Yes	Yes	Yes	Yes	Yes
Includes screen saver, auto-scan and variable hotkey options.	No	No	Yes	Yes	Yes
Confirmation of selected ports on local and cascaded LINDY CPU Switches.	No	No	Yes	Yes	Yes
Supports keyboard modes 1,2 and 3 and mouse prompt and stream modes for maximum compatibility.	No	No	Yes	Yes	Yes

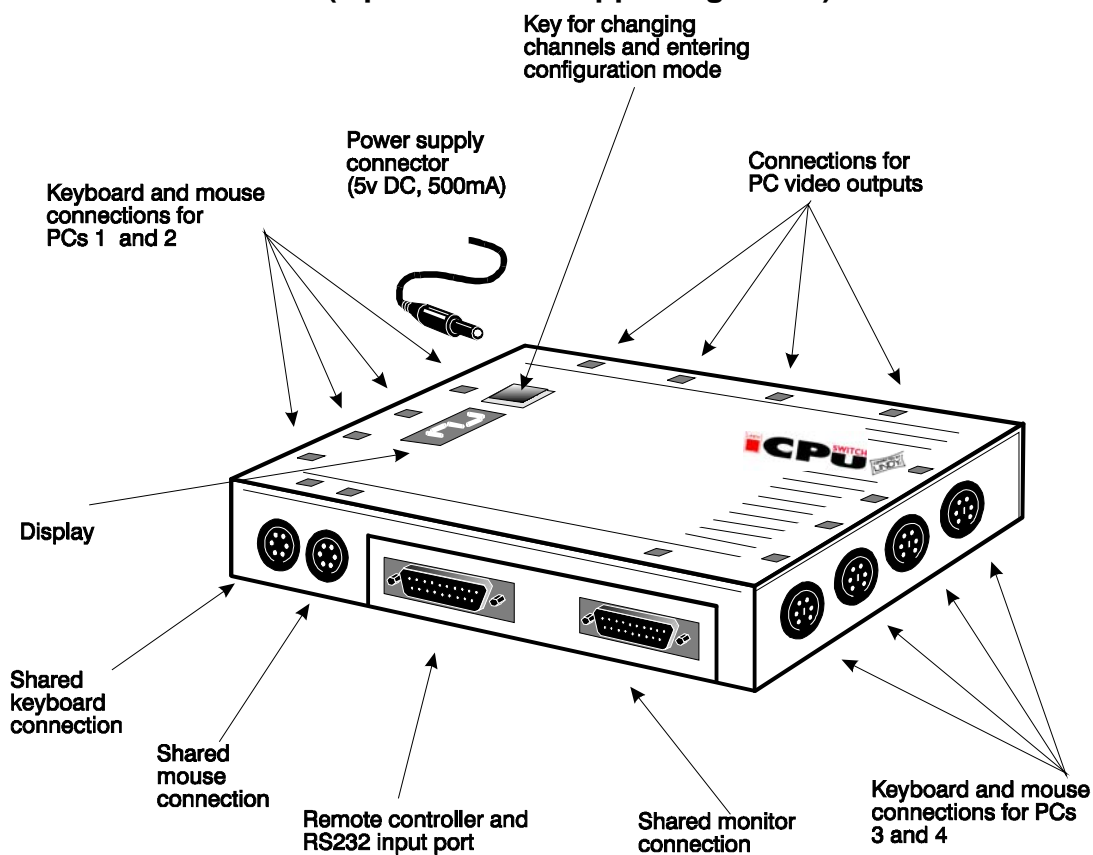
## 1.2 Package contents

LINDY CPU 16 OSD Switch	LINDY CPU 8 OSD Switch	LINDY CPU 4 OSD Switch	LINDY CPU 4 Switch	LINDY CPU 2 Switch
LINDY CPU Switch.	LINDY CPU Switch.	LINDY CPU Switch.	LINDY CPU Switch.	LINDY CPU Switch.
Power supply suitable for your country.	Power supply suitable for your country.	Power supply suitable for your country.	Power supply suitable for your country.	Power supply suitable for your country.
This installation guide.	This installation guide.	This installation guide.	This installation guide.	This installation guide.
6 x stick on self-adhesive rubber feet.	6 x stick on self-adhesive rubber feet.	6 x stick on self-adhesive rubber feet.		
2 x mounting brackets for fixing the unit into a 19 inch rack.	2 x mounting brackets for fixing the unit into a 19 inch rack.	2 x mounting brackets for fixing the unit into a 19 inch rack.		
6 x screws for fixing mounting brackets to the LINDY CPU Switch.	4 x screws for fixing mounting brackets to the LINDY CPU Switch.	4 x screws for fixing mounting brackets to the LINDY CPU Switch.		

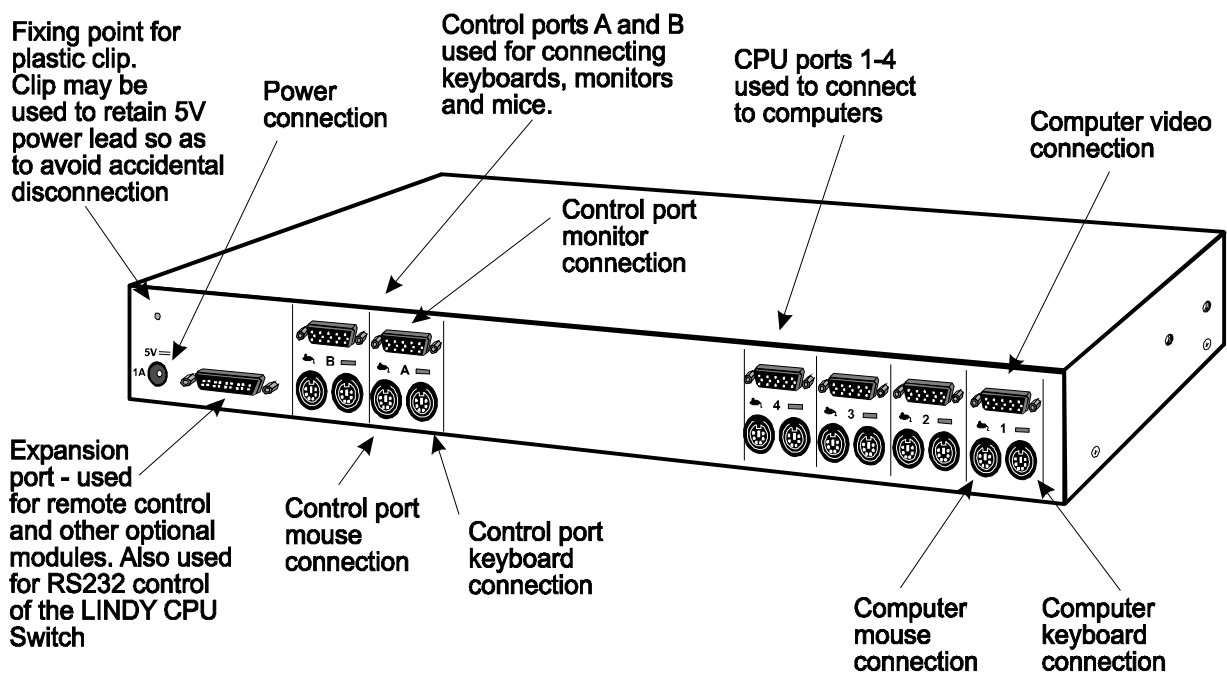
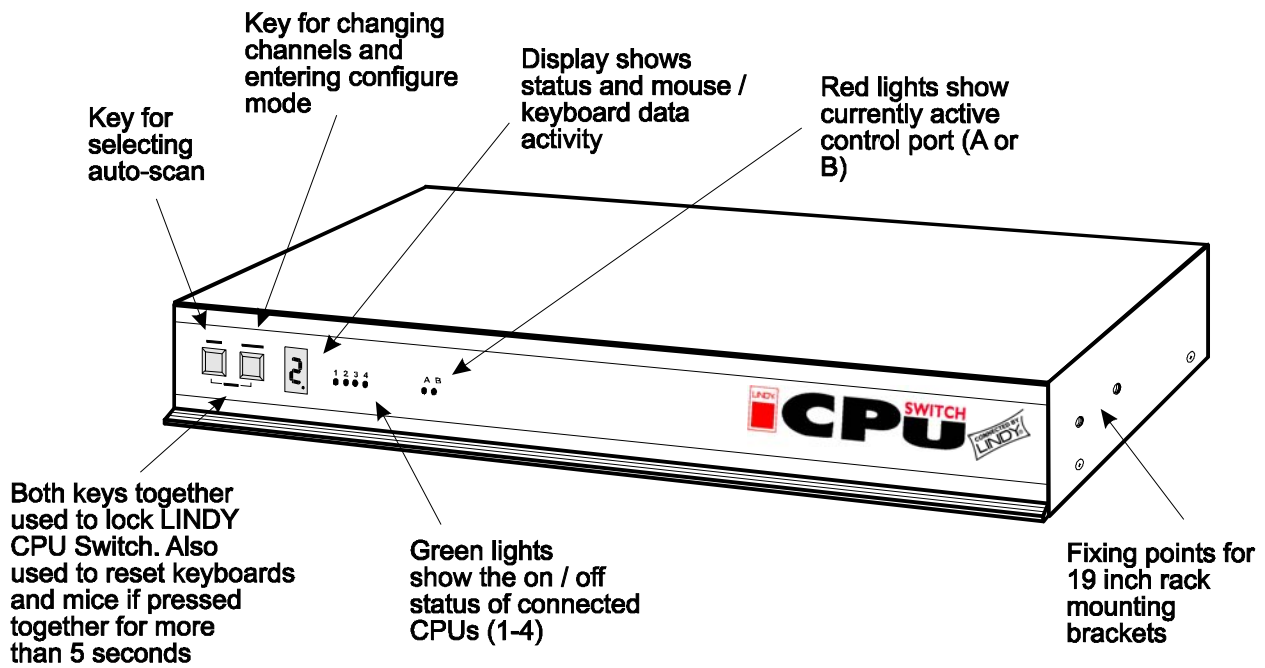
## 1.3 Product information



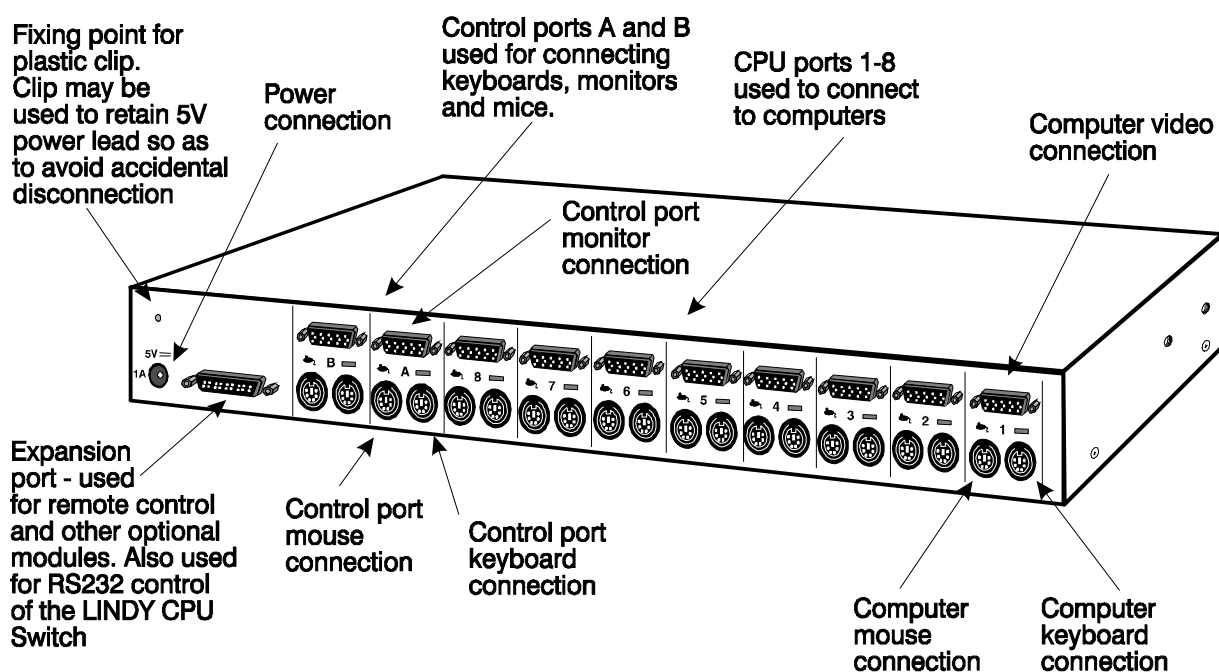
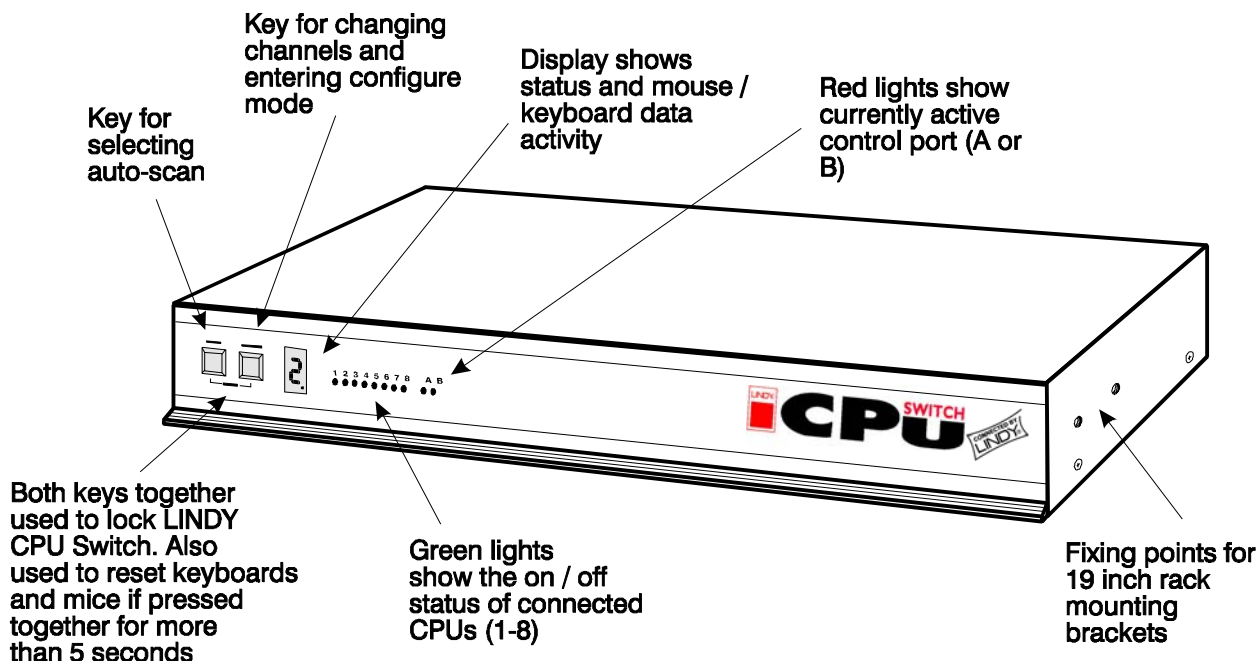
**Figure 1 - LINDY CPU Switch (2 port version supporting 2 PCs)**



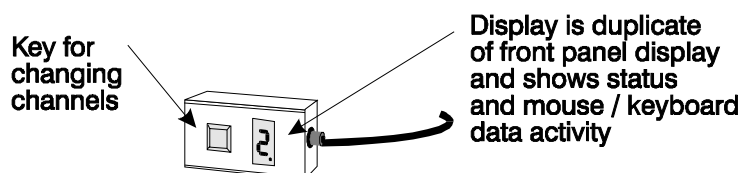
**Figure 2 - LINDY CPU Switch (4 port version supporting 4 PCs)**



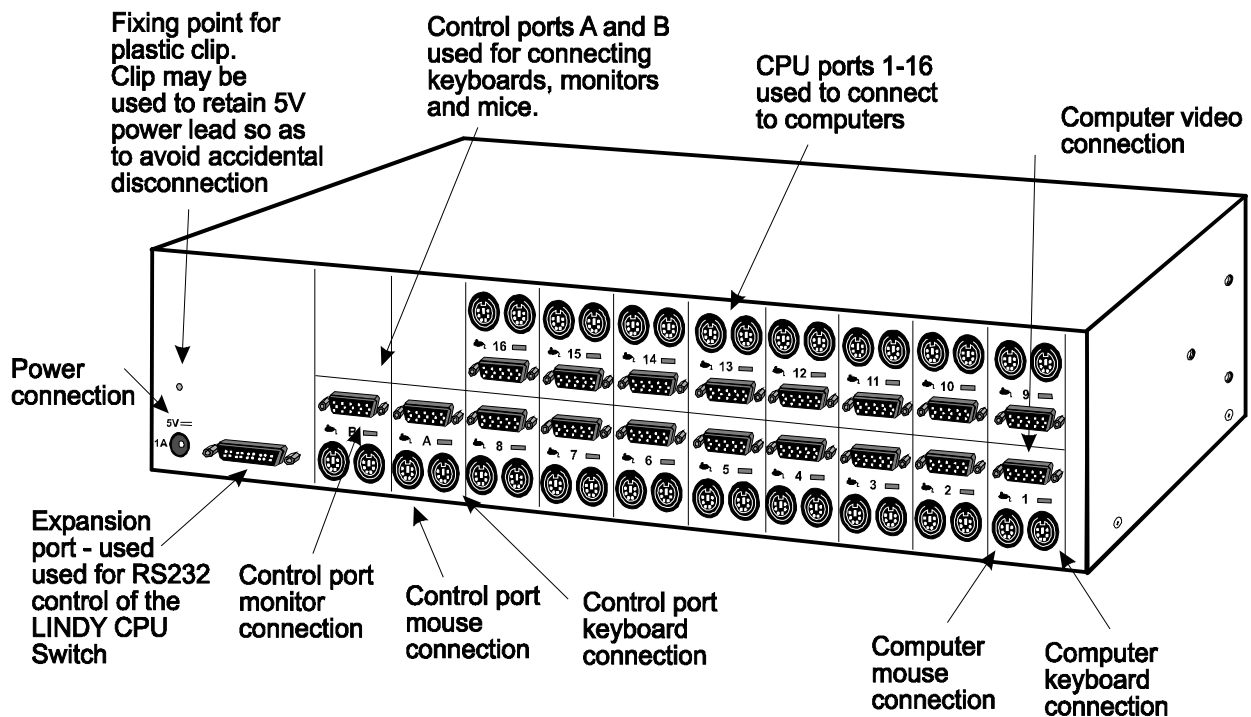
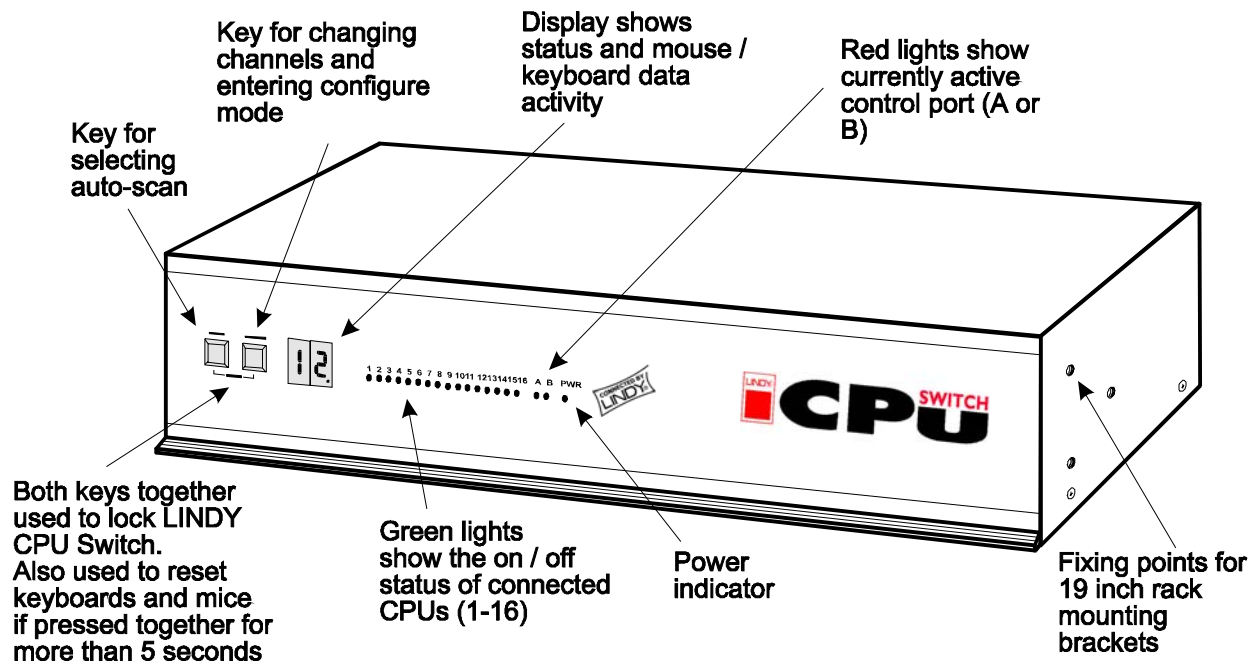
**Figure 3 – LINDY CPU 4 OSD Switch Front & Rear views (4 port version supporting 4 PCs)**



**Figure 4 – LINDY CPU 8 OSD Switch Front & Rear views (8 port version supporting 8 PCs)**



**Figure 5 - Remote control pad / display**  
 (Optional accessory not for use with the LINDY CPU 2 or LINDY CPU 16 OSD Switches)



**Figure 6 – LINDY CPU 16 OSD Switch Front & Rear views  
(16 port version supporting 16 PCs)**



## 2. Installation

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### 2.1 What you will need

- Cables to connect the LINDY CPU Switch to each of your PC keyboard, video and mouse ports. Cable specifications are given in appendix B. (You do not need to connect a mouse cable if you are not using the mouse).
- A monitor with a standard VGA/SVGA (15 pin) connector that will work when connected directly to each of your PCs. LINDY CPU Switch supports low and high resolution monitors.
- A standard AT or PS/2 style keyboard. If you are using an AT keyboard with a 5 pin connector you may connect this to the LINDY CPU Switch using a standard AT to PS/2 keyboard adapter.
- A PS/2 style two or three button Microsoft® or Logitech® compatible mouse or a Microsoft® IntelliMouse compatible mouse. If you wish to use the mouse to switch the LINDY CPU Switch's channel then you will need a three button mouse or an IntelliMouse.

(The LINDY CPU Switch supports 'Internet Mice' that are compatible with the Microsoft® IntelliMouse. These are fitted with a wheel or other scroll control and sometimes have additional buttons. Examples are: Microsoft® IntelliMouse, Logitech® Pilot Mouse+, Logitech® MouseMan+, Genius® NetMouse and Genius® NetMouse Pro).

- A suitable mouse driver for your PCs. Supported types are:
  - PS/2 or RS232 two button mouse driver (any manufacturer).
  - Microsoft® mouse driver (including IntelliMouse).
  - Logitech® mouse driver (including two button, three button and wheel mouse).
- Use of PS/2 and RS232 style mice with the LINDY CPU Switch - All of the mouse connections from LINDY CPU Switch to PCs support either a PS/2 or an RS232 mouse. LINDY CPU Switch automatically converts from the PS/2 mouse commands to RS232 serial mouse commands. Serial mice types are selected by using an adapter as described in Appendix B. This adapter is the same as is shipped with Microsoft® auto-sensing mice. The LINDY CPU Switch will operate without a mouse connected if you do not wish to use one.

## 2.2 Mounting the LINDY CPU Switch

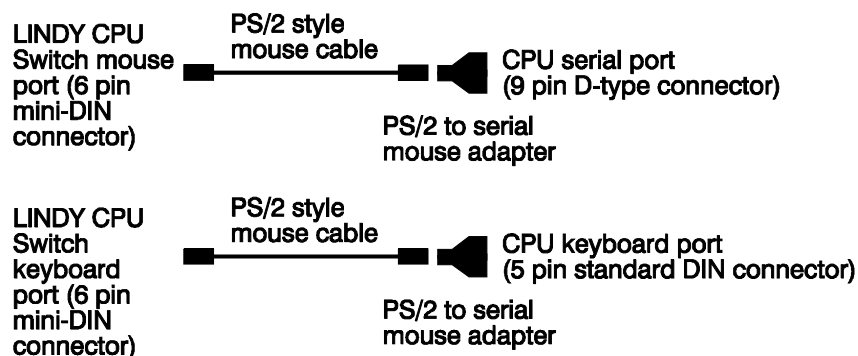
LINDY CPU 2 & 4 Switches	LINDY CPU 4 OSD, 8 OSD & 16 OSD Switches
The LINDY CPU Switch has been designed to be used either on a desktop or mounted close to the computer system boxes which it is serving. If the LINDY CPU Switch is mounted away from the desktop, you may find the optional remote control keypad/display unit a useful accessory (not for use with 2 port version)	The LINDY CPU Switch has been designed to be used either on a desktop or mounted in a 19 inch rack. If the LINDY CPU Switch is to be used on a desktop then you will need to stick the supplied self-adhesive rubber feet to the underside of the LINDY CPU Switch. If the LINDY CPU Switch is to be mounted in a 19 inch rack then you will need to fit the rack mounting brackets to the side of the LINDY CPU Switch. Do this using the brackets and screws provided.

## 2.3 Connecting your devices

Ensure that the power is disconnected from the LINDY CPU Switch and all devices which are to be attached.

LINDY CPU 2 & 4 Switches	LINDY CPU 4 OSD, 8 OSD & 16 OSD Switches
Connect the shared keyboard, PS/2 mouse and monitor to the connectors at the front of the LINDY CPU Switch (see Figures 1 and 2).	Connect the shared keyboard, PS/2 mouse and monitor to the connectors at the rear of the LINDY CPU Switch (see Figures 3, 4 and 6). You may connect your keyboard monitor and mouse to control port A or B. If you are connecting two sets of keyboards, monitors and mice then you do not need to use the same brands or mix of devices on each control port. For example, you may wish to use a two button PS/2 mouse on one port and a Microsoft® IntelliMouse on the other.

Next connect each computer system unit in turn with the keyboard cable, mouse cable and video cable. Any unused computer connections can be left unconnected. To connect computers with serial mouse connections and AT style keyboard connections use the adapters supplied in the cabling pack as shown below. Alternatively, if you have chosen not to purchase the cable pack, refer to Appendix B for cable specifications.



The LINDY CPU Switch is now ready for connection to the mains using the mains power adapter supplied. It is important to apply power to the LINDY CPU Switch first, then power on the monitor and each of the computers in turn. Failure to switch the LINDY CPU Switch and computers on in the correct order can lead to the mouse and/or keyboard not being recognised by the computers when they are switched on.

## 2.4 Configuring your PCs

Configure your PC in the same way that you would if your keyboard, mouse and monitor were all connected directly to your PC, but bearing in mind the following points:

- LINDY CPU Switch emulates Microsoft® compatible serial, IntelliMouse and PS/2 mice, so ensure that your PC software is configured for a Microsoft® mouse of the correct type. Refer to the list of supported drivers in section 2.1.
- LINDY CPU Switch supports VGA/SVGA (XGA/XGA2 only supported by OSD models) type monitors, but does not support the automatic detection features available with some 'plug and play' monitors and video cards. If you have this type of video card and monitor, you should select the video mode manually instead of relying upon the automatic detection feature.

## 2.5 Other useful installation information

**PC boot up sequence** - When your PCs are powered on they communicate with any attached keyboards and mice and setup parameters required by the particular operating system. It is necessary for the LINDY CPU Switch to be attached and powered on during this sequence so that it can give the required responses and keep track of all the modes and settings requested by each of the connected PCs.

**Mouse characteristics** - do not unplug a PS/2 mouse connection from a PC whilst the PC is on. Due to the design of PS/2 mice communications the mouse function on the PC will be lost and you will have to re-boot the PC to regain normal operation. Unplugging the mouse from the LINDY CPU Switch will also cause it to stop operating when it is plugged back in. RS232 mice can usually be unplugged and plugged back in provided that a mouse was connected when the operating system initially booted. The LINDY CPU Switch is fitted with a PS/2 mouse recovery system which allows you to disconnect and re-connect the shared mouse without powering down the system (although this is generally not advisable) - see section 2.6 for details.

**Keyboard and mouse mode switching** - The LINDY CPU Switch keeps a log of the keyboard and mouse mode and resolution settings requested by each of the connected PCs. These settings are automatically restored to the shared keyboard and mouse when the LINDY CPU Switch channel is switched thus ensuring maximum software compatibility. The <NUM LOCK>, <CAPS LOCK> and <SCROLL LOCK> states are an obvious example of this process.

## **2.6 Re-enabling a disconnected PS/2 mouse**

If you disconnect the shared PS/2 mouse from the LINDY CPU Switch by accident during operation then the mouse operation will be lost when the mouse is plugged back in. To avoid having to reboot the entire system in this situation the LINDY CPU Switch is fitted with an automatic mouse recovery system.

With the PS/2 mouse disconnected, change the channel using the keypad or keyboard hotkeys. The LINDY CPU Switch detects that the mouse has been disconnected and triggers the automatic recovery system. Plug in the PS/2 mouse and the LINDY CPU Switch will re-initialise it.

### **IMPORTANT NOTE**

#### **LINDY CPU 4 OSD, 8 OSD & 16 OSD Switches only**

**Alternatively you can reset the keyboards and mice by holding the SELECT and AUTO keys down together for 5 seconds. A complete power off reset of the connected keyboards and mice will then be performed. This function only resets the shared keyboard and mice that are plugged into ports A and B. It does not affect the status of any of the other ports on the switch or the CPU connections.**

## 2.7 Hot plugging the LINDY CPU Switch into running systems and re-enabling disconnected CPU PS/2 mouse connections

It is advisable to switch off the systems that are going to be connected to the LINDY CPU Switch before installation. However if this is not possible then most systems can be hot plugged by using the LINDY CPU Switch's mouse restoration functions. The keyboard connection will normally restore itself automatically.

On many PCs, mouse movement will be lost if the PS/2 mouse is unplugged and plugged back in whilst the PC is running. Mouse movement can then only be restored by rebooting the PC. This is because the mouse drivers only setup and enable the mouse when the PC is initially booted.

If you have switched off your LINDY CPU Switch or you are attempting to 'hot plug' it into a system that is already running, you may be able to restore lost mouse movement using the LINDY CPU Switch's mouse restoration functions.

### IMPORTANT NOTE

**Mouse restoration functions should be used with care as unpredictable results may occur if the wrong mouse type is selected. If in doubt restore the mouse by powering down the PC normally.**

Standard PS/2 mouse data uses a different data format to IntelliMouse data and so two reset functions are provided on the LINDY CPU Switch. The type of data format expected by the PC depends upon the driver and the type of mouse that was connected when the driver was booted. The following table may be used as a guide. Note that the mouse reset functions predict the likely mouse resolution settings but may not restore the speed or sensitivity of the mouse exactly as they were when the PC originally booted.

Type of mouse / system Connected at bootup	Driver type	Likely expected data format	Suggested restoration
PS/2	PS/2 only	PS/2	F5
PS/2	IntelliMouse	PS/2	F5
IntelliMouse / LINDY CPU Switch	PS/2 only	PS/2	F5
IntelliMouse / LINDY CPU Switch	IntelliMouse	IntelliMouse	F6

To restore lost mouse movement on a CPU connected to the LINDY CPU Switch:

- 1) Select the CPU that has lost its mouse movement
- 2) Press the select key on the front of the LINDY CPU Switch for 5 seconds until 'C' is displayed.  
You are now in configure mode.
- 3) To restore a PS/2 mouse connection press

 <ENTER>

Or, to restore an IntelliMouse connection press

 <ENTER>

- 4) Exit from configure mode by typing

 <ENTER>

- 5) Test the mouse movement by moving the mouse a short distance.

F5 - Restore PS/2 mouse function

F6 - Restore IntelliMouse function

## 3. Using the LINDY CPU Switch

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This section explains the general operation of the LINDY CPU Switch. We recommend that you read this section before starting to use the product.

### 3.1 Power on status

At power on the LINDY CPU Switch selects PC number 1 and displays '1'. If a password has been set then 'P' will be displayed and the LINDY CPU Switch will remain locked until a valid password is entered. The 16 port model is also fitted with a power indicator.

### 3.2 Status lights (4 OSD, 8 OSD & 16 OSD Versions only)

The green CPU status lights (1-16) show the on/off status of the connected CPUs. This status is derived from the CPU keyboard connection and operates even when the LINDY CPU Switch is powered off.

The red status lights (A and B) show the activity status of the local and remote keyboard / monitor / mouse control ports. When port A is active port B is disabled and vice versa. A port becomes active and the associated light comes on when keyboard or mouse data activity has been detected. When no keyboard or mouse data has been detected for the timeout period (see section 4.4) the port becomes inactive, the light goes out and the other port can then be used.

### 3.3 Front panel keys and remote controller

KEY	LINDY CPU 2	LINDY CPU 4	LINDY CPU 4 OSD	LINDY CPU 8 OSD	LINDY CPU 16 OSD
SELECT key	The SELECT key is used to select which channel is currently controlled by the shared keyboard, mouse and monitor ports. It is also used to enter configuration mode (see section 4). Pressing the key during normal operation will cause the next channel to be selected.				
	Cycle around ports 1 & 2	Cycle around ports 1, 2, 3 & 4	Cycle around ports 1, 2, 3 & 4	Cycle around ports 1, 2, 3, 4, 5, 6, 7 & 8	Cycle around ports 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 & 16
	<b>Not compatible</b>	An optional remote controller is also available which replicates the SELECT key and display, but can be located remotely from the LINDY CPU Switch. This is particularly useful in applications where the LINDY CPU Switch is located away from the desktop. The remote controller can be conveniently attached to your keyboard with a couple of Velcro strips to give instant channel information and key control.			<b>Not compatible</b>
AUTO key	<b>Not compatible</b>	The AUTO key puts the LINDY CPU Switch into auto-scan mode. The ports scanned and the scan time can be selected by options L and T in configure mode (see section 4.4).			
AUTO and SELECT keys pressed together (Lock function)	<b>Not compatible</b>	Pressing the AUTO and SELECT keys together will cause the LINDY CPU Switch to select channel 0 and disable all video output. If a security password has been set then the LINDY CPU Switch will lock, display P and wait for the password to be entered before unlocking the LINDY CPU Switch.			
AUTO and SELECT keys pressed together for 5 seconds (keyboard and mouse reset function)	<b>Not compatible</b>	After 5 seconds the LINDY CPU Switch's display will blank and power to the shared keyboards and mice will be switched off causing a complete reset of these devices. After several further seconds the power will be re-applied and normal operation is resumed. This reset function does not reset the computer connections to the LINDY CPU Switch.			



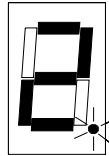
### 3.4 Status display

The status display usually shows the currently selected port. If autoscan mode is selected, the segments will illuminate in sequence in a clockwise direction interspersed with a display of the currently selected channel. If LINDY CPU Switch has been locked, 'P' will be displayed until a valid password has been typed to unlock the unit. Data flow from the mouse or keyboard causes the dot to flash.

#### DISPLAY SHOWS

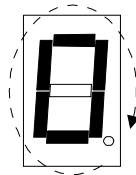
#### MEANING

Channel number displayed and dot in lower right hand corner flashes (0 indicates LINDY CPU Switch is disabled)



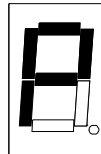
Activity on keyboard or mouse

Illuminated segment shifts clockwise with port number shown after each scan round



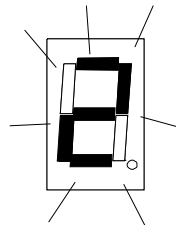
Auto-scan mode - scanning from channel to channel at rate as programmed by user

'P' prompt



Locked mode waiting for password to be entered

Display flashes port number



LINDY CPU Switch is in screen save mode - keyboard, mouse or keypad activity will re-enable the video

### 3.5 Using the dual control ports (A and B) - OSD versions only

The LINDY CPU Switch is fitted with two control ports, A and B. Each control port has a keyboard, mouse and monitor connection. Either control port may be used to access the LINDY CPU Switch. Typically port A may be used for local access and port B for remote access (up to 20 metres away). The video picture is duplicated on both ports and the LINDY CPU Switch will accept keyboard and mouse data from one control port at a time. Whilst the other port is active, the <NUM LOCK>, <CAPS LOCK> and <SCROLL LOCK> keys on the inactive control port's keyboard will flash indicating that the port is currently disabled. Once there has been no keyboard or mouse data on the active control port for the timeout period, the other keyboard can be used. Once activity is detected then this new port becomes the active port and the other port is disabled. The currently active port is indicated on the front panel. If neither the A or B lights are on then either control port may be used.





### 3.6 Keyboard hotkey control



LINDY CPU Switch can be conveniently controlled by selecting channel, autoscan mode or security locking from the keyboard. All of the hotkey control commands are invoked by holding down the two hotkeys and then pressing a command key. By default, the two hotkeys are **Ctrl** and **Alt**, although other combinations can be selected by reconfiguring the hotkeys (see section 4.7). Once the hotkey command has been activated you will need to release the hotkeys and the command key before a new hotkey command is accepted by the LINDY CPU Switch. HOTKEYs + **Tab** is an exception and this allows you to 'tab through' the ports by holding down the hotkeys and repeatedly pressing **Tab**.

The hotkey command are summarised below

(note that the numbers on the numeric keypad do not form part of a valid hotkey) :

Hotkey Sequence	CPU 16 OSD	CPU 8 OSD	CPU 4 OSD	CPU 4	CPU 2
'HOTKEYs' & <b>1</b>	Select channel 1	Select channel 1	Select channel 1	Select channel 1	Select channel 1
'HOTKEYs' & <b>2</b>	Select channel 2	Select channel 2	Select channel 2	Select channel 2	Select channel 2
'HOTKEYs' & <b>3</b>	Select channel 3	Select channel 3	Select channel 3	Select channel 3	-
'HOTKEYs' & <b>4</b>	Select channel 4	Select channel 4	Select channel 4	Select channel 4	-
'HOTKEYs' & <b>5</b>	Select channel 5	Select channel 5	-	-	-
'HOTKEYs' & <b>6</b>	Select channel 6	Select channel 6	-	-	-
'HOTKEYs' & <b>7</b>	Select channel 7	Select channel 7	-	-	-
'HOTKEYs' & <b>8</b>	Select channel 8	select channel 8	-	-	-
'HOTKEYs' & <b>9</b>	Select channel 9	-	-	-	-
'HOTKEYs' & <b>1 0</b>	Select channel 10	-	-	-	-
'HOTKEYs' & <b>1 1</b>	Select channel 11	-	-	-	-
'HOTKEYs' & <b>1 2</b>	Select channel 12	-	-	-	-
'HOTKEYs' & <b>1 3</b>	Select channel 13	-	-	-	-
'HOTKEYs' & <b>1 4</b>	Select channel 14	-	-	-	-
'HOTKEYs' & <b>1 5</b>	Select channel 15	-	-	-	-
'HOTKEYs' & <b>1 6</b>	Select channel 16	-	-	-	-
'HOTKEYs' & <b>Tab</b>	Selects the next channel				
'HOTKEYs' & <b>0</b>	Switches off the video signal and display 0. This will cause some monitors to go into standby mode or switch off. The video signal can be re-enabled by selecting a channel				

Hotkey Sequence	CPU 4 OSD, 8 OSD and 16 OSD Only
'HOTKEYS' & 	Displays the on screen menu for selecting computers by name
'HOTKEYS' & 	Selects autoscan mode where each channel is displayed for the selected time (see section 4.4). To cancel autoscan mode simply select any fixed channel either by hotkey or using the LINDY CPU Switch button.
'HOTKEYS' & 	Disables the LINDY CPU Switch 's shared keyboard and mouse and displays 0. The video signal is switched off. If a password has not been set then the LINDY CPU Switch can be re-enabled by selecting a channel. If a password has been set then the LINDY CPU Switch displays 'P' to indicate that a valid password must be entered to unlock the switch. Simply type the same key combination as was set during configuration (see section 4.9) then press the <ENTER> key. Note - if anyone has typed at the keyboard whilst in secure mode, it will be necessary to press the <ENTER> key first to clear the invalid password, then type the valid password followed by pressing <ENTER> again.
'HOTKEYS' &  then {number} (where {number} is 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9).	Selects the channel specified by {number}. This allows ports on cascaded units to be selected. For example hotkeys + 010216 would select port 1 (01) on the current LINDY CPU Switch, port 2 (02) on the next cascaded LINDY CPU Switch and port 16 on the last LINDY CPU Switch.

Examples of common hotkey sequences (assuming  +  hotkey option):

To select channel 2:                      press    release   

To 'tab through' channels:            press    release  press 

Release  press  release   

To select channel 15 (on a CPU 16 OSD):

press    release   
press  release   

### 3.7 On Screen Menu control

IMPORTANT NOTE

This next section dealing with the On Screen Menu control is a feature only supported on the LINDY CPU 4 OSD, 8 OSD & 16 OSD versions.

LINDY CPU SWITCH

Computer	Port
NT Server A	355
NT Server B	356
Local IBM PC	1
Local Compaq PC	2
Web Browser	4
Comms Server A	5
Comms Server B	6
Fred's PC	7

Dot shows currently selected computer

On-screen menu (CPU 4 OSD & CPU 8 OSD) Port numbers are entered as single digits

LINDY CPU SWITCH

Computer	Port
NT Server A	030505
NT Server B	030506
Local IBM PC	01
Local Compaq PC	02
Web Browser	04
Comms Server A	05
Comms Server B	06
Fred's PC	07

Dot shows currently selected computer

On-screen menu (CPU 16 OSD) Port numbers are entered as double digits with leading zeros where required

LINDY CPU Switch can conveniently select a computer using the integral On Screen Menu control. The menu is called up by pressing the two 'HOTKEYs' and **[M]**. When the menu is first called up, there will be no named computers listed. You must first enter the names and port numbers for computers which are to be selected from the menu.

#### Adding a computer to the menu list

With the menu visible on the screen, press the <INSERT> key. This will cause a new *Computer* entry field to be inserted on the menu. This is highlighted in red with a flashing cursor to indicate the text entry position. Type in a name up to 16 characters long. You can use upper/lower case, special and space characters. When completed press the <ENTER> key. The red highlighted area now moves into the *Port* entry field and you can enter the port number for the named Computer. Port numbers are specified using single digits on the CPU 4 OSD and 8 OSD models and double

digits on the CPU 16 OSD model (adding a leading 0 if necessary). ). If you are using cascaded LINDY CPU Switches, the cascade routing will need to be entered (see section 3.10 for more details). To specify port 5 on a LINDY CPU Switch that is cascaded off port 3 you would enter port number 35 (CPU 4 OSD & CPU 8 OSD models) or 0305 (CPU 16 OSD model). Units can be cascaded three levels deep. Now press <ENTER> again to complete the entry and store it in the menu memory.

Note that you can add another Computer to the menu list at any time. If you just use the <INSERT> key, the entry will be placed after the current line. To place an entry before the current line use <SHIFT> and <INSERT> together, then edit the new name as already described.



### Deleting a computer from the menu list




With the menu visible on the screen, highlight the computer to be deleted and press the <DELETE> key. To confirm deletion press <ENTER>. To abandon deletion press <ESC>.

### Editing a computer on the menu list

With the menu visible on the screen, highlight the computer to be edited and press the <SHIFT> and <DELETE> keys together. Type in the new Computer name and port then press <ENTER>. To abandon editing press <ESC>.

### Selecting a computer on the menu list

With the menu visible on the screen, highlight the computer to be selected using the cursor  /  or <PAGEUP> / <PAGEDOWN> keys as required. Press the <ENTER> key to switch to the highlighted computer. LINDY CPU Switch has an advanced 'connection confirmation' facility which is particularly useful in systems where many computers are displaying the same or very similar video. The selected computer name and port number will briefly flash up on the screen to confirm the selection has been made. If it is not possible to make the connection, perhaps because a cascaded unit is not switched on or is in use locally, the menu will flash 'computer unavailable' until the <ESC> key is pressed.

KEY	FUNCTION
HOTKEYs' and 	Calls the menu up onto the screen (even if no PC video exists)
<INSERT>	Adds a computer entry AFTER the currently selected line
<SHIFT> & <INSERT>	Adds a computer entry BEFORE the currently selected line
<DELETE>	Deletes the currently selected computer
<SHIFT> & <DELETE>	Edits the currently selected computer
<ENTER>	Confirms an entry or selects a computer
<ESC>	Quits from editing a line or quits from the menu
	Moves up the menu by one line
	Moves down the menu by one line
<PAGEUP>	Moves to the top of page or up 8 lines if more than 8 present
<PAGEDOWN>	Moves to bottom of page or down 8 lines if more than 8 present

### 3.8 Mouse control

The channels can conveniently be changed on the LINDY CPU Switch by using a three button mouse or IntelliMouse. In order to switch to the next channel simply hold down the central mouse button or wheel button and click on the left hand mouse button. The channel will then change.

### 3.9 RS232 control

#### IMPORTANT NOTE

**RS232 control is supported on all LINDY CPU Switches except the LINDY CPU 2 Switch**

LINDY CPU Switch can be controlled by a remote RS232 device. To select a channel the data rate of the sending device must be set to 1200 baud, 8 bits, no parity and 1 stop bit. No handshaking is used by the LINDY CPU Switch. Simply send the character for the channel which needs to be selected, for example ASCII '1' (hex code 31) will select channel 1, ASCII '2' (hex code 32) will select channel 2 and so on. Ports 10, 11, 12, 13, 14, 15 and 16 are selected by sending ASCII codes A, B, C, D, E, F and G respectively.

### 3.10 LINDY CPU Switch Remote control



#### IMPORTANT NOTE

**The remote control is only supported on the LINDY CPU 4, 4 OSD & 8 OSD Switches**

This small remote control device (see figure 5) duplicates the LED and SELECT key off the front of the LINDY CPU Switch to provide a remote means of switching channels. The status display shows the channel selected and mouse / keyboard and data activity.


### 3.11 Cascading LINDY CPU Switches

Any number of LINDY CPU Switches can be connected together to expand the number of connected computers. This can be particularly useful where clusters of computers are located some distance from each other because each unit acts as data booster and can each be up to 30 metres away from the next LINDY CPU Switch. The channel can be selected on remote LINDY CPU Switch units using an extension of the HOTKEY control function or using the On Screen Menu which will store over 300 names. The On Screen Menu is recommended for selecting computers on cascaded LINDY CPU Switches as this avoids the need to use long hotkey sequences that may be hard to remember. When using the On Screen Menu, limit the cascade depth to three levels (the maximum number of port digits that can be added to the menu).

For example, consider a situation where two LINDY CPU Switch units are connected together (as shown in figures 7 and 8). To connect to the computer attached to port 3 on LINDY CPU Switch B the user would hold down the hotkey keys then press  followed by , whilst keeping the hotkey keys pressed. This will have the effect of connecting to port '3' of the LINDY CPU Switch which is connected into port '2' of the first LINDY CPU Switch unit A. (Note: if you are cascading 16 port models then you will need to type a leading 0 before all single digit port numbers).

For example to connect to port 3 on the LINDY CPU Switch cascaded off port 2 of your first LINDY CPU Switch use:

press    release 

press  release   

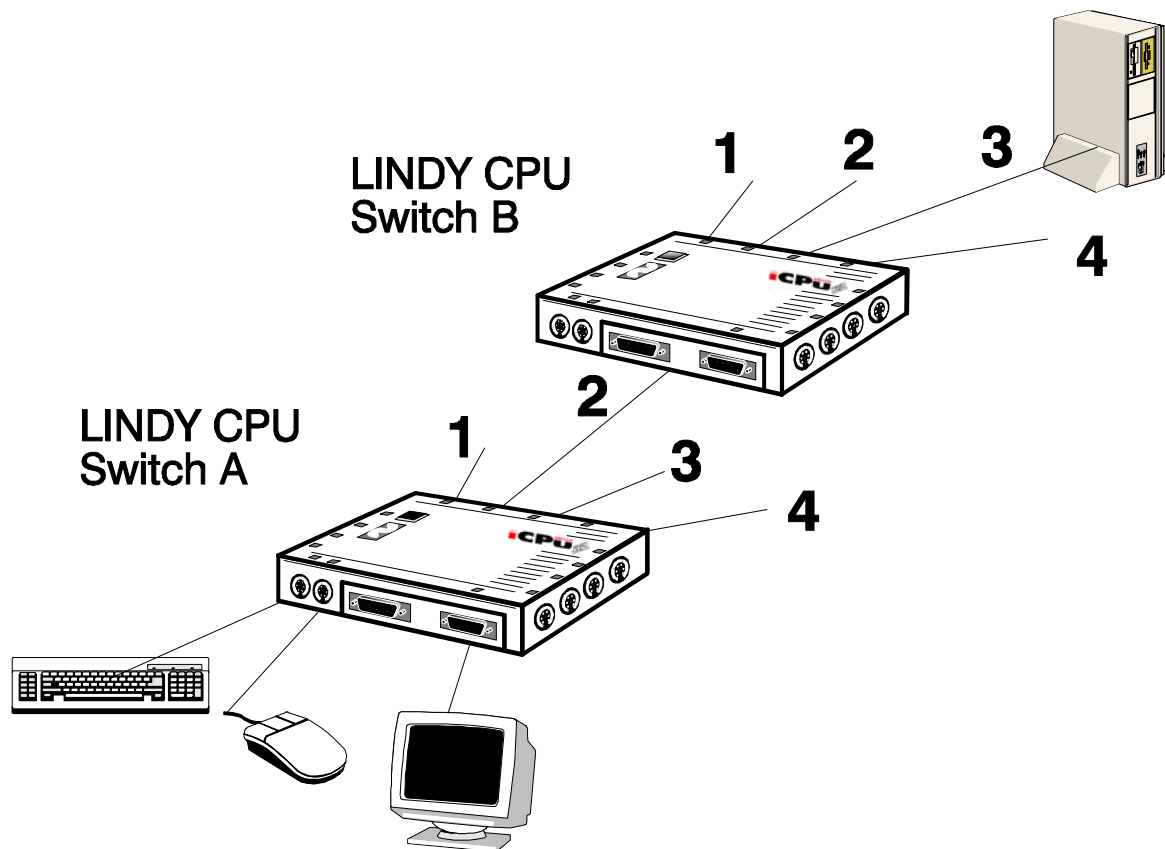
For example to connect to port 14 on the LINDY CPU 16 OSD Switch cascaded off port 1 of your first LINDY CPU 16 OSD Switch use:

press    release 

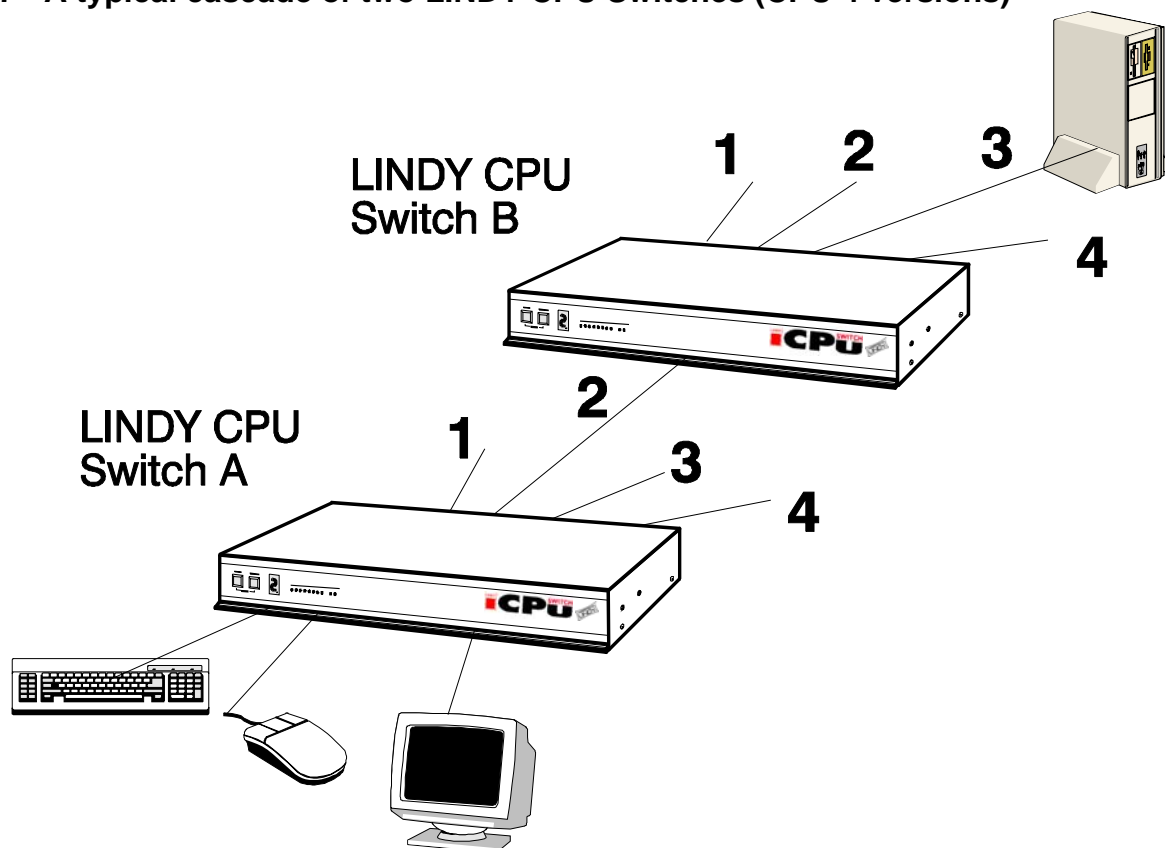
press  release 

press  release 

press  release   



**Figure 7 - A typical cascade of two LINDY CPU Switches (CPU 4 versions)**



**Figure 8 - A typical cascade of two LINDY CPU Switches (CPU 8 OSD versions)**




## 4. LINDY CPU Switch configuration options

The LINDY CPU Switch is supplied pre-configured with factory defaults which are suitable for most applications. There are a number of more advanced features and functions which can be set by the user. These are stored in the LINDY CPU Switch's EEPROM memory and are retained when the power is disconnected. The options may be changed whilst the LINDY CPU Switch is in configure mode. You may enter configure mode at initial power on or whilst the LINDY CPU Switch is running.

To enter configure mode at power on, switch off all the attached PCs and the LINDY CPU Switch. Hold down the SELECT key whilst powering on the LINDY CPU Switch. Do not release the key until the LINDY CPU Switch displays 'C' to show that it has entered configure mode.

To enter configure mode whilst the LINDY CPU Switch is running, hold down the SELECT key for 5 seconds until the front panel display shows 'C'.

Options are entered by typing a letter followed by a number followed by <ENTER>. Use <ESC> to abort the entry of an option. The LINDY CPU Switch will remain in configure mode until you type  <ENTER>.

















For example: to set hotkey option 2 type the following at the 'C' prompt

(at LINDY CPU Switch 'C' prompt)   <ENTER>

To exit configure mode type:  <ENTER>







### 4.1 Screen saver time delay

LINDY CPU Switch contains a programmable screen saver which will blank the display after the set time delay with no keyboard or mouse activity. Simply typing at the keyboard or moving the mouse will re-enable the display. The display will flash whilst the LINDY CPU Switch is in screen save mode.

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
 	Screen saver disabled (default)	Yes	Yes	Yes	Yes	Yes
 	Blank screen after 1 minute of inactivity	Yes	Yes	Yes	Yes	Yes
 	Blank screen after 2 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
 	Blank screen after 4 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
 	Blank screen after 8 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
 	Blank screen after 12 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
 	Blank screen after 16 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
 	Blank screen after 20 minutes of inactivity	Yes	Yes	Yes	Yes	Yes







## 4.2 Display options

The LINDY CPU Switch display has a flashing dot which will activate whenever the keyboard or mouse are used. Certain users may prefer to disable this flashing dot by setting the D2, D4 or D6 options. The remote control pad / display is designed to fit on the left or right hand side of the keyboard or monitor. Select the mode required so that the port number appears in the correct orientation. Modes D5 and D6 are special modes that support a monitor light module for use in banking and dealing room applications where the keyboard and mouse only are being switched. The monitor lights show which monitor is currently being controlled by the shared keyboard and mouse.

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
	Display dot flashes to indicate activity, right handed auxiliary display (default)	Yes	Yes	No	No	No
	Display dot does not flash, right handed auxiliary display	Yes	Yes	No	No	No
	Display dot flashes to indicate activity, left handed auxiliary display	Yes	Yes	No	No	No
	Display dot does not flash, left handed auxiliary display	Yes	Yes	No	No	No
	Display dot flashes, auxiliary display port configured for monitor light module	Yes	Yes	No	No	No
	Display dot does not flash, auxiliary port configured for monitor light module	Yes	Yes	No	No	No

## 4.3 Display appearance options

Options are available to change the colour scheme of the On-Screen Display and the time that the confirmation message remains on the screen after a channel has been selected.

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
	Menu appears with magenta / blue background and green highlight (default)	No	No	Yes	Yes	Yes
	Menu appears with red / blue background and green highlight	No	No	Yes	Yes	Yes
	Menu appears with blue / black background and light blue highlight	No	No	Yes	Yes	Yes
	Confirmation message remains on screen for standard time period (default)	No	No	Yes	Yes	Yes
	Confirmation message remains on screen for short time period	No	No	Yes	Yes	Yes
	Confirmation message remains on screen for extended time period	No	No	Yes	Yes	Yes

## 4.4 Autoscan 'lock on' mode and delay time

LINDY CPU Switch can be set to select each channel in turn for a period of time set by the Autoscan delay time. Autoscan mode is entered by typing the hotkey keys together with **[A]**. By default, only those channels which have a powered up computer connected to them will be scanned. Sometimes it may be desirable to scan all channels, even if the attached computer is switched off (this will simply show a blank screen when it is selected). All the LINDY CPU Switch's ports will be scanned if option L2 is selected. Some applications may also require the LINDY CPU Switch to power on in autoscan mode. This feature can be selected using the L3 or L4 options.








KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
<b>[L][1]</b>	LINDY CPU Switch locks on to active ports only during autoscanning (default)	Yes	Yes	Yes	Yes	Yes
<b>[L][2]</b>	LINDY CPU Switch locks on to every port during autoscanning	Yes	Yes	Yes	Yes	Yes
<b>[L][3]</b>	LINDY CPU Switch powers on in autoscan mode & locks on to active ports only	Yes	Yes	Yes	Yes	Yes
<b>[L][4]</b>	LINDY CPU Switch powers on in autoscan mode and locks on to all ports	Yes	Yes	Yes	Yes	Yes
<b>[T][1]</b>	2 seconds autoscan delay time before switching to next port (default)	Yes	Yes	Yes	Yes	Yes
<b>[T][2]</b>	5 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
<b>[T][3]</b>	7 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
<b>[T][4]</b>	10 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
<b>[T][5]</b>	15 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
<b>[T][6]</b>	20 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
<b>[T][7]</b>	30 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
<b>[T][8]</b>	60 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes

NOTE: Autoscan mode is ended simply by selecting a fixed channel using the on-screen menu, the keypad, the keyboard hotkeys or the mouse.

Many modern monitors are fitted with automatic power save relays and will switch off after a few seconds if connected to an inactive PC. If you are using such a monitor you must not use the L2 feature. Constant switching on and off of your monitor's relay will eventually damage your monitor.

## 4.5 Timeout setting for switching between the local and remote keyboard/mouse ports (A and B)

If you are controlling the LINDY CPU Switch from two locations then you will have connected keyboards, monitors and mice to the local and remote ports (A and B). The LINDY CPU Switch will accept keyboard and mouse data from either location and the video is duplicated on both monitors. Only one of the ports may be used at a time. The other port is automatically disabled although the video continues to be displayed. This port is re-enabled for keyboard and mouse data when there has been no activity from the currently active port for the switchover timeout period. This timeout period is selectable from 2 seconds to 10 minutes using the 'S' options in configure mode as follows:

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
	2 seconds of inactivity before allowing switchover between A & B ports (default)	No	No	Yes	Yes	Yes
	5 seconds of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	10 seconds of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	30 seconds of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	1 minute of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	5 minutes of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	10 minutes of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes

## 4.6 Mouse mode and mouse switching of channels






A three button PS/2 mouse can be used to switch channels on the LINDY CPU Switch by default. To switch to the next channel, the user simply holds down the central button or wheel button and presses the left hand button to change channel. If the user does not wish to take advantage of this feature, it can be disabled by selecting U2, U3 or U5. If the third button is being used to switch the LINDY CPU Switch then it is not available for use with PC software. Consequently in modes U1, U2 and U4 the LINDY CPU Switch reports to the PCs that a 2 button mouse is connected. If you wish to use the full function of a 3 button mouse or IntelliMouse for your PC software then you should select option U3 or U5.

The LINDY CPU Switch supports 'Internet Mice' that are compatible with the Microsoft IntelliMouse. These are fitted with a wheel or other scroll control and sometimes have additional buttons. Examples are:

Microsoft® IntelliMouse  
Logitech® Pilot Mouse +  
Logitech® MouseMan+






















Genius® NetMouse  
Genius® NetMouse Pro

Standard PS/2 and IntelliMouse compatible mice can be connected to control ports A and B in any combination. You may configure your CPUs using Microsoft PS/2 or IntelliMouse drivers in any combination as required. The IntelliMouse features are supported on both PS/2 and RS232 CPU connections. When using PS/2 CPU connections, the LINDY CPU Switch will automatically configure itself to the type of mouse requested by the driver. If you are using RS232 CPU connections then you will need to select mouse options U4 or U5 to enable the IntelliMouse features.

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
	LINDY CPU Switch channels are switchable using a 3 button mouse or IntelliMouse (default)(LINDY CPU Switch reports 2 button mouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are not switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports 2 button mouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are not switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports 3 button mouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports IntelliMouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are not switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports IntelliMouse mode to PCs)	Yes	Yes	Yes	Yes	Yes

## 4.7 Keyboard hotkey combination

The keyboard hotkey combination is used to change a channel, set autoscan mode or secure the product (so that the password needs to be typed before it can be used again). The following keyboard hotkey combinations can be selected. These hotkey combinations are used together with the command keys to trigger the required LINDY CPU Switch function. The left and right shift key combination is particularly suitable for extended keyboards where additional keys can be programmed to act as a combination of other keys. Such keyboards are supplied with many Gateway 2000 computers. Programming spare keys to trigger the hotkey combination allows channels to be selected via a single key stroke.

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
	 and  keys together (left or right hand keys operate) (default)	Yes	Yes	Yes	Yes	Yes
	 and  keys together (left or right hand keys operate)	Yes	Yes	Yes	Yes	Yes
	 and  keys together (left or right hand keys operate)	Yes	Yes	Yes	Yes	Yes
	RIGHT  key	Yes	Yes	Yes	Yes	Yes
	LEFT  and RIGHT  keys together	Yes	Yes	Yes	Yes	Yes
	LEFT  and LEFT  keys together	Yes	Yes	Yes	Yes	Yes
	RIGHT  and RIGHT  keys together	Yes	Yes	Yes	Yes	Yes
	No hotkey enabled	Yes	Yes	Yes	Yes	Yes

## 4.8 Firmware functions (version query, mouse restore and reset)

For technical support purposes, it may be necessary to find the firmware release version for the control software in your LINDY CPU Switch. For example, if the release version is v1.02 the response shown to **F1**<ENTER> will be a brief display of the digit '1', then **F2**<ENTER> will be a brief display of the digit '0', then **F3**<ENTER> will be a brief display of the digit '2'. You can reset all of the configured options back to the factory default states by typing F8. Use options F5 and F6 to restore mouse function on disconnected PS/2 CPU mouse connections. See section 2.7 for full details

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
<b>F1</b>	Display firmware first digit	Yes	Yes	Yes	Yes	Yes
<b>F2</b>	Display firmware second digit	Yes	Yes	Yes	Yes	Yes
<b>F3</b>	Display firmware third digit	Yes	Yes	Yes	Yes	Yes
<b>F5</b>	Restore PS/2 mouse function to the currently selected CPU's mouse port	Yes	Yes	Yes	Yes	Yes
<b>F6</b>	Restore IntelliMouse function to the currently selected CPU's mouse port	Yes	Yes	Yes	Yes	Yes
<b>F8</b>	RESET all configurations to factory default settings. An 'r' will show briefly on the display to confirm that the reset has been completed	Yes	Yes	Yes	Yes	Yes

## 4.9 Setting a security password

There are many situations where unrestricted access to corporate file servers or sensitive information needs to be controlled. In such circumstances, the LINDY CPU Switch can be locked away in a room or secure cabinet and controlled remotely. In this mode typing the keyboard hotkeys together with 0 will blank the screen, disconnect the keyboard and mouse from all of the computers and display 'P' on the LINDY CPU Switch display. Control can only be regained by typing the correct password on the keyboard.

To set the password in configure mode, first type **[P]** then <ENTER>. The display on the LINDY CPU Switch will change to show '=' and you can then type your password. The password is not case sensitive and can be any combination of key strokes, including the function keys, but excluding the **[Ctrl]**, **[Alt]**, **[Shift]** and <ENTER> keys. When you have typed in your password type <ENTER> to register it in the stored memory. Do not worry if you type the password incorrectly, you can always re-enter configure mode and set the password again.

NOTE - The password consists of a combination of key strokes rather like the code to a safe. The key strokes are not case sensitive and can include all the keys on the keyboard (except **[Ctrl]**, **[Alt]**, **[Shift]** and <ENTER>). Consequently the following 'password' would be valid:






















## 4.10 Exit configure mode

When you have finished configuring any special options, simply type **[E]** followed by <ENTER> to exit configure mode and return to normal operation mode. The attached computers can now be switched on.

# Appendix A. LINDY CPU Switch Configuration Summary

KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
<b>B 1</b>	Screen saver disabled (default)	Yes	Yes	Yes	Yes	Yes
<b>B 2</b>	Blank screen after 1 minute of inactivity	Yes	Yes	Yes	Yes	Yes
<b>B 3</b>	Blank screen after 2 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
<b>B 4</b>	Blank screen after 4 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
<b>B 5</b>	Blank screen after 8 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
<b>B 6</b>	Blank screen after 12 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
<b>B 7</b>	Blank screen after 16 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
<b>B 8</b>	Blank screen after 20 minutes of inactivity	Yes	Yes	Yes	Yes	Yes
<b>D 1</b>	Display dot flashes to indicate activity, right handed auxiliary display (default)	Yes	Yes	No	No	No
<b>D 2</b>	Display dot does not flash, right handed auxiliary display	Yes	Yes	No	No	No
<b>D 3</b>	Display dot flashes to indicate activity, left handed auxiliary display	Yes	Yes	No	No	No
<b>D 4</b>	Display dot does not flash, left handed auxiliary display	Yes	Yes	No	No	No
<b>D 5</b>	Display dot flashes, auxiliary display port configured for monitor light module	Yes	Yes	No	No	No
<b>D 6</b>	Display dot does not flash, auxiliary port configured for monitor light module	Yes	Yes	No	No	No
<b>D 1</b>	Menu appears with magenta / blue background and green highlight (default)	No	No	Yes	Yes	Yes
<b>D 2</b>	Menu appears with red / blue background and green highlight	No	No	Yes	Yes	Yes
<b>D 3</b>	Menu appears with blue / black background and light blue highlight	No	No	Yes	Yes	Yes
<b>D 4</b>	Confirmation message remains on screen for standard time period (default)	No	No	Yes	Yes	Yes
<b>D 5</b>	Confirmation message remains on screen for short time period	No	No	Yes	Yes	Yes
<b>D 6</b>	Confirmation message remains on screen for extended time period	No	No	Yes	Yes	Yes
<b>F 1</b>	Display firmware first digit	Yes	Yes	Yes	Yes	Yes
<b>F 2</b>	Display firmware second digit	Yes	Yes	Yes	Yes	Yes
<b>F 3</b>	Display firmware third digit	Yes	Yes	Yes	Yes	Yes
<b>F 5</b>	Restore PS/2 mouse function to the currently selected CPU's mouse port	Yes	Yes	Yes	Yes	Yes
<b>F 6</b>	Restore IntelliMouse function to the currently selected CPU's mouse port	Yes	Yes	Yes	Yes	Yes
<b>F 8</b>	RESET all configurations to factory default settings. An 'r' will show briefly on the display to confirm that the reset has been completed	Yes	Yes	Yes	Yes	Yes
<b>H 1</b>	<b>Ctrl</b> and <b>Alt</b> keys together (left or right hand keys operate) (default)	Yes	Yes	Yes	Yes	Yes
<b>H 2</b>	<b>Ctrl</b> and <b>Shift</b> keys together (left or right hand keys operate)	Yes	Yes	Yes	Yes	Yes
<b>H 3</b>	<b>Alt</b> and <b>Shift</b> keys together (left or right hand keys operate)	Yes	Yes	Yes	Yes	Yes
<b>H 4</b>	RIGHT <b>Alt</b> key	Yes	Yes	Yes	Yes	Yes
<b>H 5</b>	LEFT <b>Alt</b> and RIGHT <b>Alt</b> keys together	Yes	Yes	Yes	Yes	Yes
<b>H 6</b>	LEFT <b>Ctrl</b> and LEFT <b>Alt</b> keys together	Yes	Yes	Yes	Yes	Yes
<b>H 7</b>	RIGHT <b>Ctrl</b> and RIGHT <b>Alt</b> keys together	Yes	Yes	Yes	Yes	Yes
<b>H 8</b>	No hotkey enabled	Yes	Yes	Yes	Yes	Yes



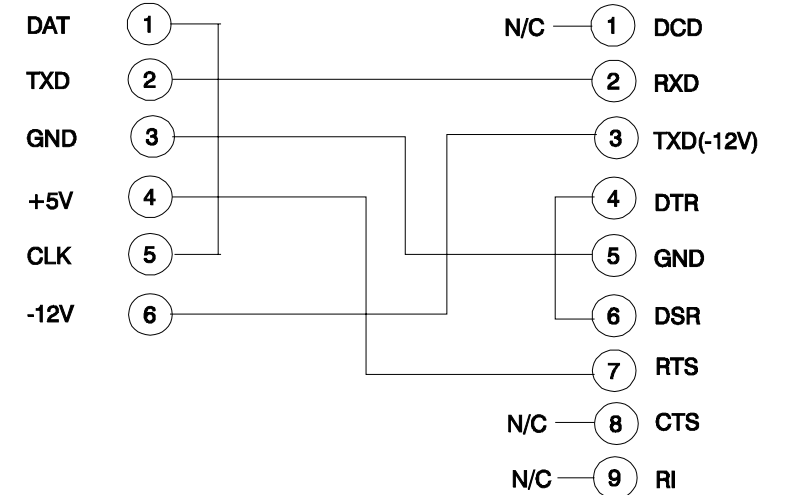
KEYS	CONFIGURATION DESCRIPTION	CPU 2	CPU 4	CPU 4 OSD	CPU 8 OSD	CPU 16 OSD
	LINDY CPU Switch locks on to active ports only during autoscanning (default)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch locks on to every port during autoscanning	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch powers on in autoscan mode & locks on to active ports only	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch powers on in autoscan mode and locks on to all ports	Yes	Yes	Yes	Yes	Yes
	2 seconds of inactivity before allowing switchover between A & B ports (default)	No	No	Yes	Yes	Yes
	5 seconds of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	10 seconds of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	30 seconds of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	1 minute of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	5 minutes of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	10 minutes of inactivity before allowing switchover between A & B ports	No	No	Yes	Yes	Yes
	2 seconds autoscan delay time before switching to next port (default)	Yes	Yes	Yes	Yes	Yes
	5 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
	7 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
	10 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
	15 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
	20 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
	30 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
	60 seconds autoscan delay time before switching to next port	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are switchable using a 3 button mouse or IntelliMouse (default)(LINDY CPU Switch reports 2 button mouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are not switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports 2 button mouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are not switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports 3 button mouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports IntelliMouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	LINDY CPU Switch channels are not switchable using 3 button mouse or IntelliMouse (LINDY CPU Switch reports IntelliMouse mode to PCs)	Yes	Yes	Yes	Yes	Yes
	Sets password – see section 4.8 for instructions.	Yes	Yes	Yes	Yes	Yes
	Exits configure mode & returns the LINDY CPU Switch to normal operation mode.	Yes	Yes	Yes	Yes	Yes

## Appendix B. Cable and connector specifications

### IMPORTANT NOTE

The maximum cable lengths supported vary widely between devices and cables. It may be possible to use cables that are longer than those specified below with certain PCs and peripherals but this cannot be guaranteed. If you experience problems try using shorter cables.

CABLE CONNECTION	CABLE SPECIFICATION
Keyboard, monitor and mouse to LINDY CPU Switch	All of the shared devices plug directly into the relevant ports at the rear of the LINDY CPU Switch. If you use an AT style keyboard you will need an AT (5 pin DIN female) to PS/2 (6 pin mini-DIN male) converter. Keyboard, monitor and mouse extension cables can be used to increase the distance from LINDY CPU Switch up to 10m. Most keyboards and mice will also operate at distances of 20 metres.
LINDY CPU Switch to PCs 1 to 16 Video	15 pin high density male D connector to 15 pin high density male D connector wired as a standard VGA PC to monitor cable. There are two types commonly available. The best type cables which will give excellent quality are constructed with coaxial cable cores. Cheaper 'data' cables are often used, but can degrade video quality if used over longer distances. Avoid using 'data' cables longer than 2 metres unless the video quality is not important. Good quality coaxial video cables may be run at distances up to 50 metres with little loss of video quality.
LINDY CPU Switch to PCs 1 to 16 Keyboard and PS/2 mice	6 pin mini-DIN male connector to 6 pin mini-DIN male connector with all lines connected straight through (1-1,2-2 etc.). If the PC has a 5-pin DIN AT style keyboard connector you will need a PS/2 to AT keyboard adapter 6-pin mini-DIN female to 5-pin DIN male (readily available). Cables should be no longer than 30 metres.

CABLE CONNECTION	CABLE SPECIFICATION
<p>LINDY CPU Switch to PCs 1 to 16</p> <p>RS232 serial mice</p>	<p>These require a special converter to connect the RS232 lines present on the LINDY CPU Switch mouse ports to the RS232 port on a PC. The wiring is identical to that used by Microsoft for their autosensing mouse adapter and is shown below:</p> <div data-bbox="638 380 1436 1030"> <div> <p>6pin MINIDIN female</p> <p>takes cable from LINDY CPU Switch</p> </div> <div> <p>9pin D female</p> <p>plugs into PC serial port</p> </div>  </div> <p>Cables should be no longer than 30 metres.</p>
<p>Expansion port pin assignments</p>	<p>The 15 way D connector located on the back of the LINDY CPU Switch provides connections for the remote control module and allows an external RS232 device to control the LINDY CPU Switch. See section 3.5 for more details.</p> <p>Pin 9 = GND Pin 11 = RXD Other pins to be left unconnected</p>

## Appendix C. Problem Solving

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PROBLEM	ACTION
Poor video quality with smearing fuzziness or ripple.	Use screened coaxial video cables to connect your devices to the LINDY CPU Switch.
Mouse does not move cursor on screen	Ensure that the mouse and computer are both connected to LINDY CPU Switch before power is connected and ensure LINDY CPU Switch is powered on before the attached computer. Ensure that your software is configured to accept a Microsoft compatible mouse of the type that you have connected (PS/2 or RS232). If you move the mouse and the activity indicator (dot on 7 segment display) does not flash then the LINDY CPU Switch is not receiving data from the mouse. Check the mouse connection to the LINDY CPU Switch, try resetting the mouse using the reset function (section 3.3) or re-powering the LINDY CPU Switch. If you are attempting to connect the LINDY CPU Switch to a CPU with a PS/2 mouse connection that has not been powered down then you will need to use the mouse restoration functions F5 or F6 (see section 2.7).
Keyboard does not function or functions intermittently. Num lock light does not always come on when the num lock key is pressed.	Some older keyboards were designed for use with specific computers and are not truly AT or PS/2 compatible. These are not common but if you experience problems try another keyboard.
Video appears to be lost after a PC has gone into auto power down mode. Moving the mouse and typing at the keyboard does not wake it up.	Some computers tested output an incomplete video signal in auto power down mode. The on-screen menu cannot 'lock on' to this signal and so cannot be displayed under these conditions. If the LINDY CPU Switch menu is left on the screen and this type of auto power down occurs then the screen becomes blank. Keyboard and mouse data is captured by the menu process and so is not sent to the computer to cause it to wake up. The operation therefore appears to 'hang'. To restore the video under these conditions press escape, return or change the channel using HOTKEYs + channel number. Alternatively, you may wish to avoid leaving the menu on the screen if you have a PC that exhibits this anomaly.

PROBLEM	ACTION
Mouse causes channel to change.	Some cheaper mice are not fully compatible with the LINDY CPU Switch and can lose data causing the channel to be changed (if mouse switching of channels is enabled). If you experience this problem then change the mouse and use a Microsoft, Logitech, IBM, Compaq or Hewlett-Packard type. Ensure that you are using a Microsoft compatible mouse driver on your PC. Some other manufacturers' drivers may switch the mouse to use a proprietary mouse data format not supported by the LINDY CPU Switch. If you have unplugged and re-connected a mouse to the LINDY CPU Switch then ensure that you reset it using the mouse reset function (see section 3.3).
Mouse jumps around the screen after disconnecting the mouse cable or powering down the LINDY CPU Switch.	If you have disconnected and re-connected a CPU mouse cable or you have powered down the LINDY CPU Switch then the mouse data format may be out of synchronisation with that required by the PC (PS/2 or Intellimouse). Try the 'restore Intellimouse' function (F6) to resolve the problem or re-power the CPU.
LINDY CPU Switch does not power on correctly (display is blank or stuck after power on).	Switch the LINDY CPU Switch off and leave for 10 seconds. Re-power the LINDY CPU Switch, preferably from a switch on a wall socket rather than by plugging in the connector to the rear panel of the LINDY CPU Switch. Try switching off all the connected CPUs and switching on the LINDY CPU Switch first. If this action does not resolve the problem then there is a fault with the LINDY CPU Switch.
Mouse consistently fails to boot when using a Compaq integrated keyboard / mouse model MX11800 with the LINDY CPU Switch, Windows NT 4.0 and a PS/2 connection to some types of PCs.	<p>There are three possible solutions to this problem:</p> <ul style="list-style-type: none"> <li>• Use a different mouse.</li> <li>• Connect the LINDY CPU Switch mouse connection to a serial port on the NT 4.0 unit rather than the PS/2 port.</li> <li>• Select channel 0 or a port that is not connected to an NT 4.0 box whilst NT is booting. Use the system normally once the logon screen appears.</li> </ul>

